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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,946	11/03/2000	Josef Laumen	1324	2110

7590 04/11/2003

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EXAMINER

CHAUDRY, MUJTABA M

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/623,946

Applicant(s)

LAUMEN ET AL.

Examiner

Mujtaba K Chaudry

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) 9 (cancelled, see paper No. 8) is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The corrected or substitute drawings were received on February 24, 2003. These drawings are accepted.

Specification

The corrected or substitute specification were received on February 24, 2003. The specification is accepted.

Response to Amendment

Applicant's arguments/amendments with respect to amended claims 1, 6 and 7, original claims 2-5 and 8 and newly added claims 10-12 have been fully considered but are moot in view of the new ground(s) of rejection. As a note of reference, claim 9 was cancelled (see paper No. 8). The examiner would like to point out that this action is made final which is necessitated by applicant's amended claims (See MPEP 706.07a). Pending claims in the application are rejected under new prior art.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephen B.

Wicker (**Error Control Systems** – ISBN 0132008092) further in view of Guha (USPN 5699369A).

As per claims 1, 3, 6-7 and 10-12, Wicker teaches (text: pages 437-440) encoding and decoding data using Fire codes. Wicker (p. 437, paragraphs 2-3) teaches Fire codes that are capable of correcting a single burst in a variable-length code word as stated in the present application. Wicker teaches (p. 438) coding data with a fire code of generator polynomial, $G(x) = (x^{(2b-1)} + 1) * g(x)$ where $g(x)$ is a irreducible polynomial of degree m and the value of b may be free set within predetermined limits as stated in the present application. Applicant uses the polynomial $G(x) = (x^{(c)} + 1) * P(x)$ and states in the specification (p. 7 of application) that $c = 2b - 1$.

Wicker does not explicitly teach the variable C in the irreducible polynomial to be changeable so that the variable redundancy can be obtained as stated in the present application.

However, Guha, in an analogous art teaches (title and abstract) a system and method for adaptive forward error correction system, which utilizes Fire codes. Guha teaches (col. 14, lines 13-65) properties of Fire Codes as stated in the present application.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporated adaptability for Fire Codes of Guha within the teachings of Wicker to form the present method and apparatus. This modification would have been obvious to

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one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by varying the value of "C" in the irreducible polynomial of the fire code would have enhanced the error detecting/correcting capability since the system would be adaptive.

As per claims 2, 4 and 5, Wicker teaches (p. 438-439) the technique to calculate the value for $2b-1$, which is equivalent to c in the present application. Wicker also teaches (p. 437) a disk register whose length can be set to b , wherein b can be less than m as stated in the present application.

As per claim 8, Wicker teaches (p. 440) the Fire decoding operation in which the redundancy properties are incorporated as stated in the present application. In particular, steps 3 and 4 (p. 440) Wicker states if one syndrome is nonzero and the other is zero, then the codeword contains a uncorrectable but detectable error, which is analogous to d in the present application. The equation $(d = c + 1 - b)$ in the present application which may be interpreted as $c = (b + d) - 1$ wherein the term $b + d$ represents the bundle error and the detectable error and is incorporated in steps 3 and 4 of Wicker.

The examiner disagrees with the applicant and maintains all rejections with respect to amended claims 1, 6 and 7, original claims 2-5 and 8 and newly added claims 10-12. All arguments have been considered. It is the examiner's conclusion that amended claims 1, 6 and 7, original claims 2-5 and 8 and newly added claims 10-12 are not patentably distinct or non-obvious over the prior art of record.

Conclusion

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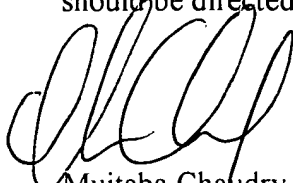
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

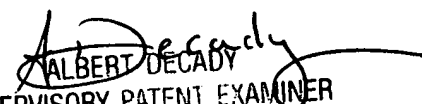
Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 703-305-7755. The examiner may normally be reached Mon – Thur 7:30 am to 4:30 pm and every other Fri 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 703-305-9595. The fax phone number for the organization where this application is assigned is 703-746-7239.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist at 703-305-3900.



Mujtaba Chaudry
Art Unit 2133
April 4, 2003



ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100